THE PSYCHOLOGY OF CLIMATE CHANGE IN EMERGENCY MANAGEMENT GRADUATE EDUCATION

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ABSTRACT

The *Psychology of Disaster and Climate Change* is an elective course in the Trauma-Informed Emergency Management Program at the University of Maine at Augusta. The discussion-based course addresses the research of psychological interactions with disaster and climate change, including decision making, uncertainty, resilience, mental health, vulnerable population impacts, migration, and political and social perceptions (including climate skepticism). Students are required to complete case studies on disaster events and climate change risks in which they explore the many components of the human interactions with disaster and climate change. The course was previously offered at the undergraduate level and will be provided at the graduate level beginning in fall 2022. Students reported that the discussion format promoted the sharing and exploration of competing worldviews at the undergraduate level. The case studies enabled students to deeply engage in the course topics' complexities.

Keywords: the psychology of climate change, emergency management, disaster

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This article provides an overview of a graduate course that advances emergency management students' knowledge and understanding of disaster and climate change through a psychological lens. First, I introduce the program and university. Then, I describe and justify including this course in an emergency management program curriculum. To conclude, I offer information about the course assessment and student responses to the course and plans.

UNIVERSITY AND PROGRAM BACKGROUND

The Trauma-Informed Emergency Management (TEM) program is an emerging graduate program at the University of Maine at Augusta (UMA). UMA is a part of the University of Maine System, which includes seven sister universities. Each of the seven sisters is a different university with unique missions, though all system universities share a single accreditation through the New England Commission of Higher Education (NECHE). UMA is a small state university with a statewide mission for access to education. UMA's programs include distance education (video conferencing or asynchronous web courses). UMA has two main campuses in Augusta and Bangor and eight centers and dozens of receiving sites scattered across the state of Maine, catering to students in Maine's rural and remote regions. Most of UMA's 5,600 students are non-traditional and have work and family responsibilities to balance their educational endeavors.

The TEM program launched a graduate certificate in fall 2021 and is on track to offer a master's degree in fall 2022. The program marks UMA's third graduate offering, launching in the second academic year in which UMA has expanded into graduate education. This is Maine's first emergency management graduate program. The scoping work for developing this program began as a systemwide effort. As such, we can draw faculty expertise from all of the seven sister universities. It was noted during this scoping process that the majority of courses would be offered by UMA faculty and that UMA already had a robust infrastructure for distance education. At the time, UMA was moving toward offering graduate curricula and the decision was made for students to matriculate through UMA. The 16 program faculty teach their respective courses in this unique collaborative endeavor from their home institutions.

COURSE OVERVIEW

The course described in this paper is *Psychology of Disaster and Climate Change* (TEM/PSY 533). It is adapted from an existing undergraduate psychology course with the same name. The undergraduate course was first offered in fall 2015; the graduate course has not yet been offered. The graduate course content is substantively different from the undergraduate version, though the core topics remain the same. Specifically, the undergraduate course spends significant time describing the human interactions with natural disasters and climate change to provide students the necessary environmental understanding to contextualize the role of psychology in a content area that many students initially consider to be rooted solely in the physical sciences. However, a core course in the graduate program is Natural Disasters and Human Risk Factors (TEM 531). Students taking the graduate-level *Psychology of Disaster and Climate Change* will have already received a firm foundational understanding of the human interactions with disaster and climate change. This leaves significant space in TEM/PSY 533 to delve more deeply into the psychological literature to critically explore the psychological implications of these human interactions. The undergraduate course also explores this literature, though in a lesser breadth and depth. The learning outcomes for the graduate course are to

- articulate the defining characteristics of the psychology of disaster and climate change
- describe the choices and responses of disaster management professionals in a disaster scenario
- describe the choices and responses of individuals and communities in a disaster scenario
- understand and apply the theoretical perspectives of the psychology of disaster and climate change
- critically evaluate research and lay commentary regarding disaster and climate change
- synthesize peer-reviewed research on the human dimensions of disaster and climate change
- assess the socio-cultural and political contexts that influence individual and collective behavior and impacts regarding disaster and climate change
- develop near-term and long-term recommendations for disaster and climate change planning, mitigation, and adaptation

The course addresses an array of psychological interactions with disaster and climate change, including decision-making (Finucane, 2009; Iskander et al., 2018; Ramchurn et al., 2015), uncertainty (Ramirez & Briones, 2017; Sternman & Sweeney, 2007), resilience (Cretney, 2015; Hamama-Raz, 2017; Li et al., 2019; Suzuki et al., 2017), mental health (Cianconi et al., 2020; Hayes, 2018; Martin, 2015; Obradovich et al., 2018), impacts to vulnerable populations (Corlew, 2016; Cutter, 2017; Pinderhughes, 1996; Spence et al., 2007), migration (Arnall & Kothar, 2015; Bettini et al., 2017; Reuveny, 2001), and political and social perceptions (Drews & van der Bergh, 2016; McCright & Dunlap, 2011; Rafaty, 2018; Quimby & Angelique, 2011). Because this course is rooted in the *psychology* of disaster and climate change, climate change is an assumed fact of the course materials (as are disasters), and the psychological implications are discussed. While students are not required to believe in climate change, they must engage with its psychosocial impacts in our world. To this date, no self-identified climate-change deniers have enrolled in the course, though several students have joined the class expressing ignorance or doubt. They were open to being educated and persuaded, and they were.

The roots and motivations of climate change skepticism are covered extensively under political and social perceptions. A significant amount of psychological research has been conducted on ideology and worldview regarding a person's likelihood of accepting the science surrounding climate change (Hakkinen & Akrami, 2014; McCright & Dunlap, 2011). Additionally, there are psychological impacts to non-skeptics, particularly vulnerable populations who may already be dealing with the effects of climate change, when skepticism dominates leaders' public narrative and decisions (Tiatia-Seath, 2020). Climate change skepticism can cause distress by undermining people's lived realities and ignoring or even increasing climate change risks (Clayton, 2020; Panu, 2020).

Psychology of Disaster and Climate Change (TEM/PSY 533) meets the elective requirements of three programmatic concentrations: Community Resilience, Emergency Management and Preparedness, and Mental Health. Its purpose in the overall curriculum is to incorporate climate change considerations and preparedness to emergency management and its adjacent fields. Prerequisites for the course are admission to the Trauma-Informed Emergency Management program, a completed undergraduate degree, or permission from the instructor. It is not required, but it is strongly encouraged that students complete the program's core courses before taking electives. This course is offered in a hybrid modality (live or web-synchronous classes with offline discussion contribution options) to provide the most flexible access to our students.

COURSE ASSESSMENT

TEM/PSY 533 is a discussion-based course, meaning that students are expected to complete the readings, put in some thought work, and bring prepared discussion contributions to class either live or via online discussion boards. Discussion is beneficial to text comprehension (Murphy et al., 2009). Also, it prepares students to voice their knowledge and opinions on course topics as they interact with these issues throughout their lives (Parker, 2010). Additionally, students will complete two case study term projects, which critically engage them in the complex course topics (Herreid, 2005). The first is a case study of a disaster

event, in which students "explain 1) the event facts; 2) the sociopolitical response; 3) an individual or personal tale of the disaster event and recovery; and 4) the psychological implications, responses, impacts, and/or motivations of communities and professionals in your chosen natural disaster." The second is a climate change case study of a country that is not the United States (and/or the student's home country). In the context of the psychology of climate change, students "will describe 1) the climate change-related vulnerabilities of that country, including increasing hazards; 2) the political, social, cultural and/or economic realities that may exacerbate those climate vulnerabilities; 3) the current political and social responses to climate change in that country; 4) an individual or personal tale of someone in that country who is working with or impacted by climate change; and 5) a critical/theoretical application of psychological issues covered in this class to the experiences/risks of your chosen country."

In this course's previously offered undergraduate sections, student reception was strong and positive. Students enjoyed that the weekly discussions provided an opportunity to deeply share their thoughts and listen to various perspectives rather than being restricted to the professor's sole voice in the lecture. ("No offense," added one student—and very honestly, none was taken since that is the exact pedagogical reasoning behind designing this as a discussion-based course). We practiced disagreeing early in the semester, starting with a silly round robin where the students were instructed to turn to their neighbor and say, "I disagree with you." No point had been made or counterpoint offered; it was simply the act of stating disagreement. Following this ice breaker, students were required to disagree with something the previous person said, in a discussion setting, further lending practice by naming specific points and offering counterpoints. Throughout the semester, the disagreements in discussions allowed students to learn the nuances of each other's points of view. Even contentious topics and robust debates were met with a heightened understanding of competing worldviews. When we reached the political psychology topic weeks, students knew each other. They understood each other well enough that conversations about students' political parties, news sources, and ideologies were thoughtfully engaged.

Additionally, students responded positively to the case studies, which have been broadened extensively for the graduate version of this course since they are the primary grading and evaluation mechanism. Students appreciated that the case studies had specific requirements that nonetheless offered flexibility according to student interest. Moreover, the case studies required that students look at their target event or country along many dimensions, then apply psychological research and theory to events and information that are not often considered according to their psychological impacts and underpinnings. This enabled students to better comprehend why this climatological phenomenon is a human issue and a psychological one. Any preparedness or adaptation measure is likely to fail if it is taken without considering primary human responses to change (Finucane, 2009; Story & Forsyth, 2008).

FUTURE PLANS AND CONCLUSION

TEM/PSY 533 will likely be offered in fall 2022 when our first graduate cohort begin to take program electives. Several of our students have already noted an interest in this course by name.

Because the long-term impacts of climate change include an increase in natural disasters and a variety of sociopolitical emergencies, climate change is likely to be increasingly included as a subtopic in other programmatic courses. While climate change is a primary focus in The Psychology of Disaster and Climate Change, climate change issues and applications need to be reiterated across the curriculum to fully prepare our graduating professionals.

REFERENCES

Arnall, A., & Kothari, U. (2015). Challenging climate change and migration discourse: Different understandings of timescale and temporality in the Maldives. *Global Environmental Change. 31.* 199-206.

Cianconi, P., Betro, S, & Janir, L. (2020). The impact of climate change on mental health: A systematic descriptive review. *Frontiers in Psychiatry. 11*(74).

Clayton, S. (2020). Climate anxiety: Psychological responses to climate change. *Journal of Anxiety Disorders. 74*. https://doi.org/10.1016/j.janxdis.2020.102263

Corlew, L. K. (2016). Psychological impact of climate change on marginalized groups. In A. Czopp (Ed.) *Social issues in living color: Challenges and solutions from the perspective of ethnic minority psychology*. Praeger Books.

Cretney, R.M. (2015). Local responses to disaster: The value of community led post disaster response action in a resilience framework. *Disaster Prevention and Management 25*(1).

Cutter, S.L. (2017). The forgotten casualties redux: Women, children, and disaster risk. *Global Environmental Change*, 42. 117-121.

Drews, S. & van der Bergh, C.J.M. (2016). What explains public support for climate policies? A review of empirical and experimental studies. *Climate Policy, 16*(7).

Finucane, M. L. (2009). Why science alone won't solve the climate crisis: Managing climate risks in the Pacific. *AsiaPacific Issues, 89,* 1-8.

Hakkinen, K. & Akrami, N. (2014). Ideology and climate change denial. *Personality and Individual Differences. 70*, 62-65.

Hamma-Raz, Y., Palgi, Y., Leshem, E., Ben-Ezra, M., & Lavenda, O. (2017). Typhoon survivors' subjective wellbeing: A different view of responses to natural disaster. *PLoS ONE. 12*(9).

Hayes, K., Blashki, G., Wiseman, J., Burke, S., Leifels, L. (2018) Climate change and mental health: risks, impacts and priority actions. *International Journal of Mental Health Systems. 12:28.*

Herreid, C. F. (2005). Because wisdom can't be told: Using case studies to teach science. *Peer Review*. *7*(2). https://link.gale.com/apps/doc/A141755837/CSIC?u=maine_augusta&sid=summon&xid=81490144

Iskander, J., McLanahan, E., Thomas, J. D., Henry, B., Byrne, D., Williams, H. (2018). Public health emergency response lessons learned by rapid deployment force 3, 2006–2016. *American Journal of Public Health, 108*(53).

Li, T., Wang, Q., & Xie, Z. (2019). Disaster response knowledge and its social determinants: A cross-sectional study in Beijing, China. *PLoS ONE. 14*(3).

Martin. (2015). Health after disaster: A perspective of psychological/health reactions to disaster. *Cogent Psychology. 2:1.*

McCright, A. M. & Dunlap, R. E. (2014). The politicization of climate change and polarization in the American public's views of global warming, 2001-2010. *The Sociological Quarterly, 52*, 155-194.

Murphy, P. K., Wilkinson, I. A. G., Soter, A. O., Hennessey, M. N., & Alexander, J. F. (2009). Examining the effects of classroom discussion on students' comprehension of text: A meta-analysis. *Journal of Educational Psychology*. *101*(3). 740–764. https://doi-org.wv-o-ursus-proxy05.ursus.maine.edu/10.1037/a0015576

Obradovicha, N., Migliorinic, R., Paulusde, M., & Rahwana, I. (2018). Empirical evidence of mental health risks posed by climate change. *Proceedings of the National Academy of Sciences of the United States of America. 155*(43).

Panu, P. (2020). Anxiety and the ecological crisis: An analysis of eco-anxiety and climate anxiety. *Sustainability. 12*(19), 7836. https://doi.org/10.3390/su12197836

Parker, W. C. (2010). Listening to strangers: Classroom discussion in democratic education. *Teachers College Record (1970), 112*(11), 2815.

Pinderhughes, R. (1996). The impact of race on environmental quality: An empirical and theoretical discussion. *Sociological Perspectives. 39 (2)*, 231-248.

Rafaty, R. (2018). Perceptions of corruption, political distrust, and the weakening of climate policy. *Global Environmental Politics. 18*(3).

Ramchurn, S.D., Wu, F., Jiang, W., Fischer, J.E., Reece, S., Roberts, S., Rodden, T., & Greenhalgh, C. (2015). Human–agent collaboration for disaster response. *Autonomous Agents and Multi-Agent Systems, 30.*

Ramirez, I.J. & Briones, F. (2017). Understanding the El Nino Costero of 2017: The definition problem and challenges of climate forecasting and disaster responses. *International Journal of Disaster Risk Science, 8.*

Reuveny, R. (2007). Climate change-induced migration and violent conflict. *Political Geography. 26*, 656-673.

Spence, P.R., Lachlan, K.A., & Griffin, D.R. (2007). Crisis communication, race, and natural disasters. *Journal of Black Studies 37*(4).

Sternman, J. D., & Sweeney, L. B. (2007). Understanding public complacency about climate change: Adults' mental models of climate change violate conservation of matter. *Climatic Change. 80*, 213-238.

Story, P. A., & Forsyth, D. R. (2008). Watershed conservation and preservation: Environmental engagement as helping behavior. *Journal of Environmental Psychology. 28.* 305-317.

Suzuki, Y., Fukasawa, M., Obara, A., Kim, Y. (2017). Burnout among public servants after the Great East Japan Earthquake: decomposing the construct aftermath of disaster. *Journal of Occupational Health.*

Tiatia-Seath, J., Tupou, T., & Fookes, I. (2020). Climate change, mental health, and well-being for Pacific peoples: A literature review. *The Contemporary Pacific*. *32*(2). https://link.gale.com/apps/doc/A674438806/ITOF?u=maine_augusta&sid=summon&xid=79bd60eb